

## EDITORIAL

Talk about the best laid plans - we had the printer rush through Journal 1 in order to get it to you before Christmas, I picked it up on 5 December and then we found that the Post Office did not accept Presorted Bulk Mail between 6 and 26 December.

However, we have now entered 1981, and last year is now well behind us. Hopefully the increase in subscriptions will get us back on our feet financially, and then we may be able to tackle some of those suggestions that have been put aside due to lack of finance.

I have just about given up making New Year resolutions, but will be trying to keep Journals coming our regularly. As usual the problem seems to be time, or lack of it. I do have a few articles in my bin, and hopefully will get them edited over the 'slack' period. This should see the April/June issue to the printers, and hopefully may leave something to start the July/September issue.

What we need more than anything else at the moment, is someone in Melbourne to do the drawings which accompany some of the articles, preferably someone near my neck of the woods, but then the mail is not too bad at present!

Rex Little  
EDITOR

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## ON THE COVER

B15 "JUDY" is a 4-6-0 tank loco based on the WAGR B Class Loco, seen here at the Castledare Miniature Railway in West Aust.

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# Editorial JOURNAL BOX

VOLUME 30

ISSUE 142

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## PRESIDENT'S

## CORNER



## PRESIDENT'S ANNUAL REPORT

When Tim Dunlop, Ernie Dean and the late Bill Lowry first met thirty years ago to discuss the formation of the Australian Model Railway Association, in no way could they have foreseen that AMRA would grow to a membership of over 700 with active branches in four states.

Like all organisations, we have our gains and losses in membership, however, it is pleasing to report that the renewal rate for this current financial year has been most heartening.

During the year the Federal C.O.M. has received several suggestions which were discussed in detail, but, due to the costs involved, could not be proceeded with at this stage. Please do not let this deter you if you feel you can offer any constructive suggestions which may be of benefit to AMRA members as a whole. It must be pointed out once again, that at no time can the COM be involved in State Branch matters.

The Balance Sheet as at 30 June 1980, as presented by the Federal Treasurer, shows our financial position to be reasonably healthy. Regretably this is not so, as expenditure in the latter part of this year has drained our funds, and the incoming COM will have the unenviable task of deciding on increases in membership fees which have not risen since 1975, despite the massive cost increases caused by the current inflationary period.

Our Editorial Committee have been burning the 'midnight oil' and are hopeful of having Journal back on time-table early next year. With the change of printers, and the fast service they are giving us, together with the small reduction in costs involved, our optimism is high.

Norm Read, our Federal Secretary, has done a sterling job during the last

twelve months, having shouldered the responsibility of Federal Registrar as well. Thankfully, due to the increase in nominations for the C.O.M., he is now able to hand over his additional task.

Our Federal Treasurer, Ken Edwards, has carried out his time consuming duties in a very capable manner, and is to be commended. My thanks must go to all members of the C.O.M. for their loyal support and assistance during the past twelve months.

In conclusion, I sincerely hope to see our Association continue to grow in strength, and maintain the interest in our hobby.

Keith J Wilcox

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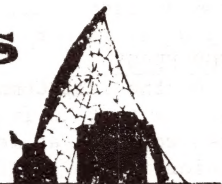
## NOTICE

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# THE SECRETARY'S DESK



At the time of writing this, I have not received any comments on the new style of Journal, maybe Rex has. Even with the savings we are making, this year we will be lucky if we financially break even. A number of members, when paying their subs, have indicated that an increase in dues is timely. It is five years since we last increased the dues and prices have sky rocketed in that period. An instance, 4 years ago we had 2000 'Guide to Model Railways' printed for \$800, we have just had a reprint of 1000 for \$775. So one of the first jobs of the incoming Committee will be to arrive at a figure for the 1981/82 subscriptions.

One of our members suggested that we may introduce what could be called a Members' file. Initially in five sections, these to contain as many sub-sections as may be considered necessary. Below is a suggested layout.

## SECTION A AMRA Information

- 1.0 AMRA Constitutions
  - 1.1 Federal
  - 1.2 Queensland
  - 1.3 New South Wales
  - 1.4 Victoria
  - 1.5 Western Australia
  - 1.6
- 2.0 AMRA Office Bearers
  - 2.1 to 2.7 by States
- 3.0 Membership Lists
  - 3.1 Overseas
  - 3.2 to 3.7 by States
- 4.0 AMRA Competitions
  - 4.1 Competition Categories
  - 4.2 Rules and Information
- 5.0 Advisory Panel
- 6.0 Journal Information
- 7.0 Items for Sale
- 8.0

## SECTION B

### Standards

## SECTION C

### Technical Sheets

## SECTION D

### Initial Literature

- 1.0 Beginners' Guide
- 2.0 Guide to Model Railways

## SECTION E

### Modellers' Information

- 1.0 Plans in Journal
  - 1.1 to 1.7 by States
- 2.0 Clubs and Associations
  - 2.1 to 2.7 by States
- 3.0 Tourist Attractions
  - 3.1 to 3.7 by States
- 4.0 Australian Railway and Model Railway Periodicals
  - 4.1 Model Railway Periodicals
  - 4.2 Railway Periodicals
  - 4.3 Tramway Periodicals
- 5.0 Glossary of Model and Railway Terms
- 6.0 ? ? ?

I would be pleased to hear any comments, and any offers to compile this information which could appear as supplements in Journal. All information sheets could be kept in a 2 or 3 ring folder with dividers. I am also curious as to how many members already keep some form of filing system, listing plans or items of interest that have appeared in Journal over the years. I heard that one of our members found a copy of Guide to Model Railways in a bag of paper packing at his place of work. So much for someone's opinion.

At the Annual General Meeting held on 28/11/80, the following were declared elected:

- |           |                      |
|-----------|----------------------|
| PRESIDENT | K Wilcox             |
| COMMITTEE | C Steele, K Edwards, |
|           | R Cornish, P Cox,    |
|           | D Musgrove, N Read   |

I expect that the positions will be the same as last year, but the position of Registrar is not yet finalised.

#### STOP PRESS

At the last Committee meeting it was decided that, as from 1 March 1981, the fees would be as follows:

Senior	\$10 per annum
Joining fee	\$8
Student	\$7 per annum
Family	\$2 per annum for all other members of the family

The COM also approved Meritorious Awards for B E Thoday of WA, Audrey Cornish of NSW and R Brownbill of Victoria. Our congratulations to these members. These awards are but a token of our appreciation for the time and effort these members have given to the Association over a number of years. It is only by the efforts of such members

that the pulse of the Association still keeps beating.

Another small matter. All cheques and Money Orders should be made out to AMRA, not to a person. Thanks to those who so kindly add the 10c exchange on interstate cheques.

The NSW and WA Branches once again held successful exhibitions during October, and all those concerned in their presentation are to be commended, for they not only give a boost to AMRA, but also to the hobby in general.

The standard of models in the Federal Competitions was very good, and the Tim Dunlop Cup for Scratch Built Locomotive has returned to Melbourne for the first time in a number of years. This might even urge more interstate members to participate in our competitions.

Norm Read

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## BOOK REVIEWS

by Ted Thoday

Locomotives of Australia

Leon Oberg

A H & A W Reed Pty Ltd

7½" x 10½", 274 pages

\$9.95

As someone who knew virtually nothing about the railway history of Australia this was a fascinating book. The author has listed some 200 locomotive classes from the Government owned railways and about 50 from the major and minor private lines.

Each class is illustrated with a photograph or two, and about a page of descriptive text. The text giving a brief potted history of the class and their work. Unfortunately all photographs are in black and white.

The book starts with the first locomotive built and used in Australia on the Melbourne and Hobson's Bay Railway Co line from Flinders Street to Sand-

ridge in September 1854 and follows the development of Australian locomotives through to the present day diesels.

An appendix covers those locomotives which have been preserved at various locations throughout the Commonwealth.

I thought this book a must for anyone with an interest in Australian locomotives or who is modelling them.

A copy of this book is in the WA Branch Library.

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The Encyclopedia of Model Railways

Editor: Terry Allen

Octopus Books Ltd

9" x 12", 224 pages

\$12.95

This book should almost be required reading for anyone about to start in the railway modelling hobby. It starts with an historical look at the development of the hobby and discusses the various scale/gauge ratios, before going into the various other considerations, such as where to put the model railway, how much will it cost, how to build it.

Chapters are devoted to 'ready to run' stock, kit building, scratch-building, etc. Lavishly illustrated is the phrase - at least one photograph illustration per page! All in full colour.

The sort of book our hobby has needed for a long while. If you are a railway modeller, you should have a copy on your bookshelf.

A copy is in the WA Branch Library.

\*\*\*\*\*

### The World of Model Trains

This book, I considered, gave a very broad overview of model trains, with an historical background leading up to present day. Well illustrated, mostly in full colour.

This book, together with the Encyclopedia of Model Railways, should be required reading for all those about to embark on their first model railway project. Together these books will provide most of the answers, which hopefully will prevent you making the same mistakes most of us have made, particularly in our early years in the hobby.

A copy of this book is in the WA Branch Library.

From comments and questions I have been asked over the years, these two books fill a big hole. It is good to see that they are on the Library shelf.

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Narrow Gauge Railway Modelling  
D A Boreham  
Model and Allied Publications  
Argus Books Ltd  
ISBN 0 85242 611 9  
223 mm x 141 mm, 153 pages  
\$16.95

The author is a narrow gauge modeller of considerable repute. The book is authoritative and comprehensive, and is written in a very readable and practical manner. The first 116 pages take the reader through narrow gauge modelling from 'why narrow gauge' to the operating layout. The remainder of the book is given over to four appendices, covering the Narrow Gauge Railway Society, a Bibliography, and Narrow Gauge locomotive and rolling stock drawings. The bibliography covers six pages and lists nearly 90 books on NG railway topics and would be of great assistance to anyone researching an NG prototype. This is an expensive book by any standards, however, it is almost the 'standard' work on NG modelling and should be on every NG modellers' book shelf.

Loaned for review by Books 'n Cards, Southlands Shopping Centre, Willetton, WA.

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The Line That Led Nowhere  
Ian R Stevenson  
Rigby Ltd  
ISBN 0 7270 1029 8  
223 mm x 141 mm, 188 pages  
\$11.95

A potted history of the North Australian Railway from Darwin to Birdum covering the 90 years of its existence. A story of great foresight, of the men and machines who conquered one of the harshest parts of this great continent, of their continual fight against the climate, the terrain and how they eventually lost that fight through political intrigue and bureaucratic bumbling and obstruction.

An expensive book, but well worth reading, even to those with only a passing interest in the history of Australian railways.

Loaned for review by Books 'n Cards, Southlands Shopping Centre, Willetton, WA

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In Priase of Trains of Australia

Gary McDonald

Rigby Ltd

ISBN 0 7270 0536 7

255 mm x 312 mm, 80 pages

\$7.95

Beautiful colour photography at its best. Just sufficient text and captions to make the photographic subject and location clear. For anyone modelling the Australian railway scene, this book is almost a must for one thing above all else - the amount of detail in the pictures, on locomotives, and rolling stock, but also to your reviewer's mind more importantly the scenic detail in the trackside areas when in the photographs. Well worth the money.

Loaned for review by Books 'n Cards, Southlands Shopping Centre, Willetton, WA

Folklore of the Australian Railwaymen  
McMillian and Co Ltd

ISBN 0 333 11954 1

180 mm x 110 mm - paperback, 292 pages  
\$3.50

Romance of Australian Railways

Rigby Ltd

ISBN 0 85179 537 4

260 mm x 200 mm, 247 pages

\$8.95

Patsy Adam-Smith, daughter of a railway family, is the authoress of these two books. The titles are almost a giveaway, for the books concentrate on the human side of the railway systems. These books, about the people who worked the various railways, are full of anecdotes and personal stories, and are very hard to put down. They are worth reading just for the insight into how the early railwaymen and women made the railways work, despite everything that mother nature and anyone else could throw at them. A thread of dedication, co-operation, humour, and humanity runs through these books. Your reviewer takes his hat off to those whose story is told so well by Patsy Adam-Smith.

Loaned for review by Books 'n Cards, Southlands Shopping Centre, Willetton, WA.

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## CRANE LOCO

by Brian Hodges

On any layout, I like to see the reason for trains to run from A to B. There must be industries, mines, quarries and farms, etc. Any layout with more than one of these reasons will allow the modeller to run a large selection of rolling stock and find a purpose for it. For example, a mine not only requires coal wagons, but think of pit props, oils, steel beams, cable drums, spares for pit locos and winding gear. The list is endless and railways

were very good to modellers in that they built endless types of wagons to cater for these loads; they were also very cost conscious, but no more than industry who were no duds at inventiveness, hence if you have a loco to just shunt around a small yard, surely they could get more out of it. So a wide variety of versatile locos were produced for industry - one of the most common were the crane locos. On my own layout I have a coal mine, timber yard, farming

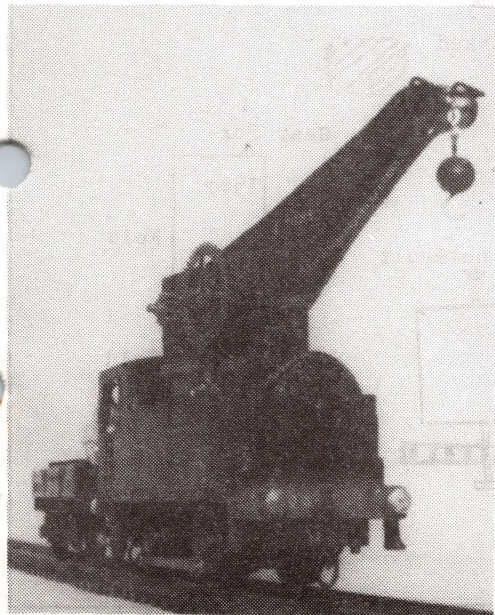
and a small steel works, all served by by rail, each one supporting the other.

On thinking out the industry, I thought about a crane loco, but no kit as far as I know was available, could I kit bash one? No - must keep the cost down, but I did have an old 0-4-0 Triang, a tube of plastibond, old alarm clock, paint, cardboard, glue and my daughter did have quite a few necklaces. The total cost would be nothing. Whereas the one I copied cost £768 from stock in 1920.

I WILL NOW ENDEAVOUR TO EXPLAIN HOW I BUILT IT.

Remove the body from chassis, remove the dome, remove the bunker and step, the bunker is removed to allow the boiler to be lengthened, cut the loco in half at the first boiler band from the cab (figure 1).

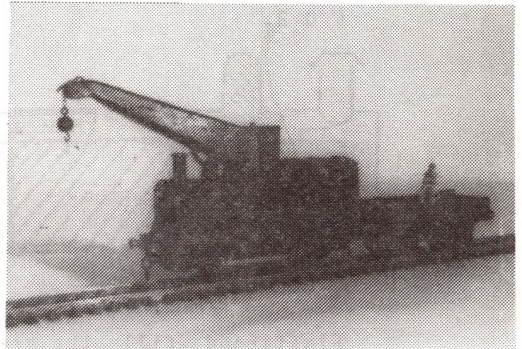
Where you remove the bunker, blank off the hole with a piece of cardboard on the inside of the cab, and fill proud with plastibond, before the plastibond sets, trim off flush with the back of the cab and set aside to harden, fill in the hole left by the removal of the dome with plastibond and again trim off flush before hardening.



Cut the side tank carefully away from the boiler and cut and trim the front piece of the side tank to fit around the smoke box.

Cut a piece of cardboard the width of tank top 35 mm long and glue to the inside top of the tank 5 mm at cab end and 5 mm at smoke box end both sides. Blank off the inside of both side tanks sides with cardboard. Then fill proud with plastibond, both the top and side, trim to shape before the plastibond sets. Don't forget to fill the gap in the boiler also.

You should now have a Triang long boiler large side tank 0-4-0T.

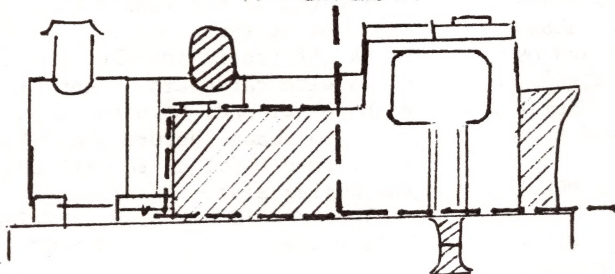


Now for the jib; get a base first big cog out of the old alarm clock will do - use the size that looks good to you and mount the cog on to the boiler with a bolt 3 cm long.

Next for the jib; cut from cardboard 2 pieces as per pattern (fig 3), plus 2 strips 1 mm wide to form stapping around the jib frame, plus 1 strip 15 x 53 mm to make a gear box from. Obtain from mum, sister, wife, daughter, one fine chain, also a bead (O). With a 40 mm length of wire, assemble as per fig 3.

The gear box should have a few gears showing on the outside which you can now get from the alarm clock (if you have followed the instructions, it should not be in working order).

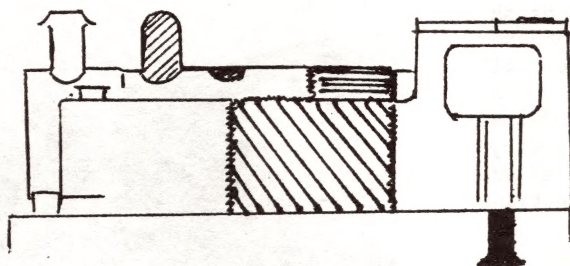
FIG 1. Tri-Ang 0-4-0T



Gearfully cut out the parts marked



FIG 2.

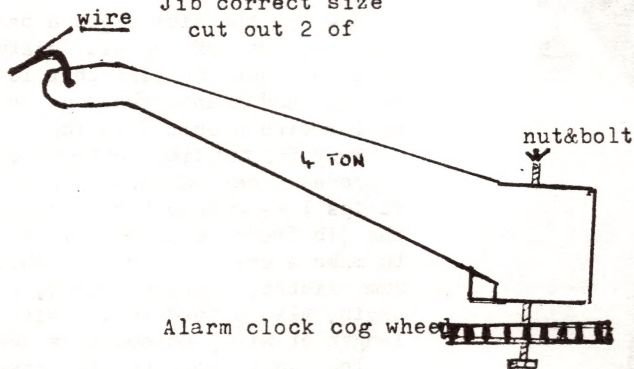


Plastibond fill the area's marked



FIG 3.

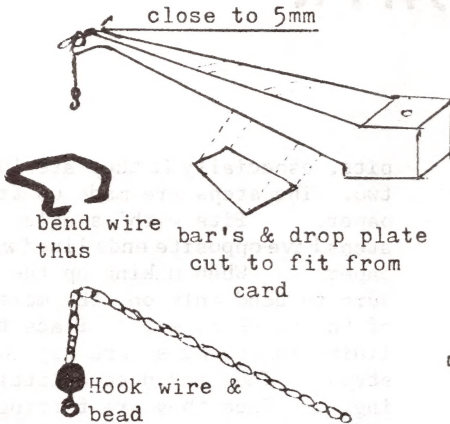
Jib correct size  
cut out 2 of



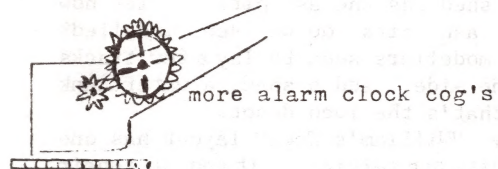
Gear Box

15mm	Fold
18mm	
20mm	Fold

## Reinforcing strip for jib cut 2 of



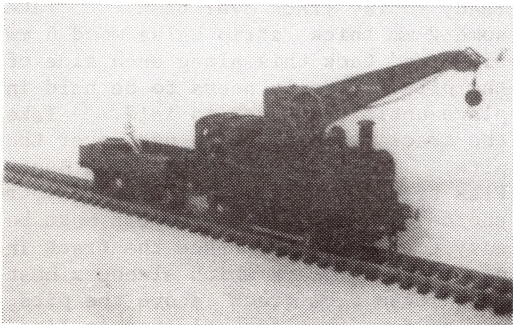
reinforcing strip placed on jib



At this stage you might think that cardboard is not a very good or strong medium to work with, but just think of how long a Super-quick building lasts! Now to paint your crane tank loco. The colour can be any you like, as private industries were not ruled by railway companies, and the choice is left right open to you. Use enamel paint, as this will firm up the thinner bits of cardboard.

To add more detail to your crane tank, add wire hand rails, coal bunker on the side tanks, also the company's name - I used M & J Transfers.

Last, but not least, make match-wagon for it, which can carry chains, extra hooks and crew.



I must say that I enjoyed building it far more than writing about it, I hope you will find time to build a crane tank, just to compensate me for the sweat I've lost writing this!

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## A.M.R.A. MERITORIOUS AWARDS UP TO 1981

Ivor Bunker	John Skilton
Bob Correll	Keith Robinson
Alan Dowel	Dot Treseder
Stephen Suggitt	Tony Grey
Rex Little	Jim Christie
Norm Read	Jack Parker
Jack Treseder	Rup Ackland
Mal Baker	Bill Morehouse
John Sneddon	George Bray
John Dunn	Arthur Hayes
Graham Larmour	Simon Mead
Ken Down	John Harry
David Ellis	Harold Warren
Arthur Robinson	Cec Wall
Bruce Lovett	Jack Eagles
Eric Doherty	Ted Thoday
June Larmour	Audrey Cornish
Fyfe Thorpe	Ray Brownbill
Eric Lyon	

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# The Ash Pit

by Bill Hughes

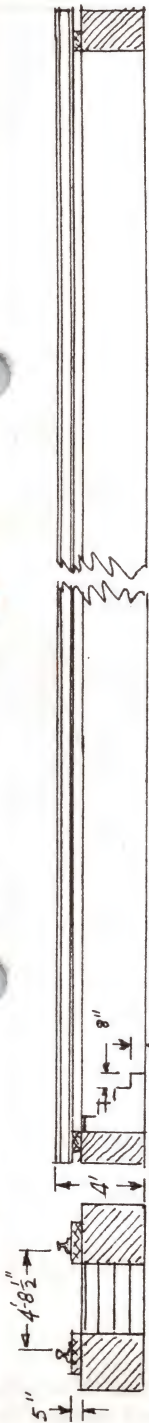
An essential part of every steam loco shed was the ash pit. Yet how many ash pits do we see modelled? Most modellers seem to lay a few tracks to one side, add a shed, a water tank and that's the loco depot.

My "William's Town" layout has one ash pit, one servicing pit and two repair pits. The loco depot was made on a piece of 'Caneite' (a sheet of insulating material made from the fibre of crushed sugar cane) 12.5 mm thick. This material is easy to work, so the pits were easy to make. First plan your loco depot. Mark out where the tracks are to be laid and where the pits are to be installed. Using a jig-saw or key-hole saw, cut out the slots which will become the pits. Be neat with the sawing. Decide whether you want brick or cement pits. Then take either brick paper (available at most hobby shops) or plain white paper of the type used for drawing. (You need something with a bit more strength than ordinary paper.) The paper is required to line the pits. See drawings.

Measure up and mark out the paper as shown on the accompanying drawings. Mark out on the reverse side of brick paper to avoid marking the bricks. Using scissors cut the paper to size and bend it into shape. (Refer to drawings.) Care must be taken to avoid bending the paper in the middle of a row of bricks. Move to the nearest mortar line, but keep the sides even or the pit in question will have a lopsided floor. Now we turn to the ends of the pits. One end of each pit must have a set of steps to allow access for the removal of ashes and the servicing and maintenance of locos. Ash pits usually have only one set of steps while servicing

pits, especially if they are long, have two. The steps are made up from brick paper. Pits with single sets of steps have opposite ends lined with brick paper. When making up the steps be sure to bend only on the mortar lines of the brick paper. Place the brick lining in the pits and try to fit the steps. They may need a little trimming. Once they are fitting snugly, measure how far they come along the pit bottom. Remove the brick lining and steps. Glue or staple the steps to the lining in the appropriate place as just measured. Allow time for the glue to dry. Replace the lining with steps attached into the pits. At this stage a small piece of brick paper may be fitted to any unstepped pit ends. A better effect is obtained if there is a 6 mm piece of brick paper bent over all around the top of each pit. This may have to be reduced to the width of a sleeper on the ends if ballast is not used. This gives the effect of a whole brick at the pit edge instead of showing the edge of the paper. It also has the added advantage of making the lining easier to position.

Having lined the pits you are now ready to lay track over them. Take some 2 mm thick strip balsa wood 6 mm wide, and tack this along each side of the pits. It only needs to be held in place until the track is laid. Take the track you intend to use over the pits. Peco streamline or Wrenn Super Flex track is ideal. Whatever your choice of track, the sleepers must be easy to remove. Place the track in position. Mark which sleepers must be removed from track above the pits, making sure that one sleeper is lined up with each end of the respective pit. Turn the track upside down. Unless



5"

4'8 1/2"

4"

3' 1 1/4"

5"

7"

8"

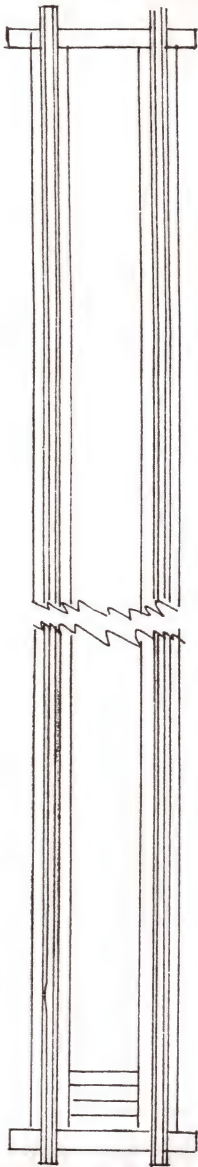
End

Elevation

ASH PIT

Front Elevation

60'

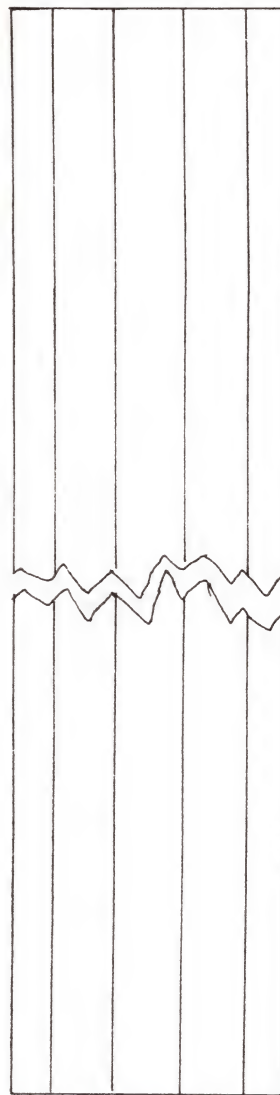


Plan



Steps  
of Paper

6mm  
10mm  
11mm  
10mm  
6mm



210mm

Paper Lining

Scale: 3.5mm = 1ft

W.J. Hughes.

Date: 22-8-1980



there is a join over the pit or at one end of it, you will have the task of removing sleepers from the middle of a length of track. This is not difficult. There will usually be more sleepers on track at one end of the pit than the other. For convenience let us call these portions of track the long and the short ends, respectively. Always work from the short end. With a hobby knife, cut the plastic spacers between the first sleeper to be removed and the last one of the long end sleepers. Now slide the sleepers to be removed plus the short end sleepers right off the length of track. Cut the short end sleepers from the unwanted ones. Replace the short end sleepers by sliding the rails back into them. When doing this care must be taken to ensure that the rails pass through every chair on every sleeper, otherwise problems will occur when trying to lay the track.

The balsa strips should be cut level with the ends of the pits. Place the track in position with the sleepers at both ends of each pit hard up against the balsa strips and inline with the pit ends. The sleeper at each stepped pit end will form the first step. Use track pins to fasten each sleepered portion into place, taking alignment into account. Then with Peco dog spikes (Ref No IL-13), using a straight edge on the rail itself, spike one rail down. I find it advantageous to pre-drill all spike holes using a numbered drill of smaller diameter than the spike. This not only facilitates guiding the spike, but

also helps to avoid splitting the balsa strips. Using a track gauge, spike the other rail in position. Again pre-drill before spiking. Look along the track to see if it is straight.

If you have taken proper care when carrying out the preceding instructions all should be well. Try running a wagon over each pit. If it stays on the track, then so should your prize locos. Should the wagon become derailed, check to find the cause and rectify this. If you are lucky enough to have a Kadee spiker, your job will be made easier. Of course other brands of dog spikes may be used. 'Peco' was mentioned because I used them and desired to suggest a source of supply.

Many loco sheds had cement aprons in the pit area. You can also model this. Although you could lay the track directly onto the base board, this is not recommended as there will be a level change when moving on and off sleepered track. A better method would be to use plaster to cover the sleepers and form the apron. To get a plain cement look, paint the apron light grey. The plaster must have a smooth surface when dry to give authentic effect. Whitewash was extensively used in by-gone days. Any one who has gone down a pit when a loco is parked over it will testify to the darkness therein. The whitewash was used to reflect what light was available, as well as to give a clean appearance.

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## OLD TIMBER BRIDGE IS RESTORED

OLD TIMER BRIDGE IS RESTORED

Reprinted from Engineers Australia -  
July/August 1980

Restoration is underway of a timber trestle bridge which is a major feature of the Puffing Billy tourist railway

in the Dandenong's region of Victoria. The Bridge, featured in many promotional exercises from postcards to postage



Puffing Billy and the bridge

stamps and classified by the National Trust, was built in the 1920s.

It has 14 spans, is about 87 m long and is 11 m above Monbulk Creek. The bridge also carries the 762 mm narrow gauge railway over an adjoining road. It incorporates a vertical curve as well as a three-chain radius horizontal curve.

The Emerald Tourist Railway Board which took over operation of Puffing Billy from VicRail in 1978 has appointed Hardcastle and Richards Pty Ltd consultants for repairs and maintenance work. The replacement of five beams, seven crossheads, four piles and a number of deck timbers, kerbs and runners, bracing and walling timber will be carried out by contract with assistance from Railways Board employees and volunteers. Works include replacement of a complete span in the highest part of the bridge. Total time for the job will be about three weeks without affecting normal weekend operations.

Large structural timbers in durability class have proved difficult to obtain in Victoria and will be provided by a NSW sawmiller at a cost of \$13 000. Recent inspections have verified the longevity of some Australian hardwood timbers used in bridges.

Beams up to 525 mm x 225 mm x 6 m dated 1914 were found to be in good condition. Piles either driven or buried in 1926 were also found to have

many more years life.

The Puffing Billy railway carried passengers and freight over the winding line in the Dandenongs until it was blocked by a landslide in 1954. With the added problem of operating losses it was closed, but following voluntary efforts by railway enthusiasts it was again opened as a tourist line in 1962. The train runs over 13 km from Belgrave to Emerald Lake and carried 175 000 passengers annually, mainly on weekend schedules.

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A.M.R.A.  
HON. LIFE MEMBERS  
up to 1981



Tim Dunlop  
Margaret Dunlop  
Alan Wilson  
Rick Richardson  
Arthur Harrold  
Jack Treseder  
Cedric Rolfe

Faith Dean  
Ernie Dean  
Norm Read  
Rex Little  
Maurie McKinnon  
June Dunn  
Stuart Westerman

\*\*\*\*\*

# Working Semaphore Signals In 4mm Scale

by Ted Thoday

During the development stages of the 'Sumwear Branch' it was decided that the layout would be signalled following Great Western Railway practice as far as practicable. The signals to be operational, illuminated and 'inter-locked' if this could be achieved.

The trade provides nothing in the way of operational, illuminated semaphores, however, certain parts were available.

Ratio Signal kits (plastic)

Mallard Models etched signal arms, links, etc.

Colin Waite etched signal arms, etc, which also included red, amber and green transparent sheet.

Hamblings turned brass lamp housing and finals.

For a variety of reasons it was thought that the Ratio kits, although excellent, were not suitable for my requirements, but more of this later.

So scratch building seemed to be the answer, using Mallard and Waite parts where they suited.

Having an Emco-Unimat lathe, a couple of Skinley drawings of G.W.R. signals and what is almost the 'bible' of G.W.R. signals, the book 'A Pictorial Record of G.W.R. Signalling' by Adrian Vaughan and published by the Oxford Publishing Co made things a bit simpler.

It was decided to build a small test bed to mount the signal post, operating gear and switches on until the system was proved. The test bed was made from  $\frac{1}{2}$ " chipboard. A flat top to mount the signal post on, and the operating gear under, and two end pieces to take the switches. An inverted 'U' shape in fact.

The first task was to turn up a signal post, including the final, from 0.125" brass rod. All the 'turning'

was done with swiss files as very little metal had to be removed. The length of the post will depend on its location and number of arms, in this case one home and one distant were required. The post was made 5.25" long, the bottom 1.125" was threaded 6BA to enable the post to be secured through the base-board. A brass washer was soldered at the top of the thread to prevent the post being pulled through the base-board when the nut was tightened underneath.

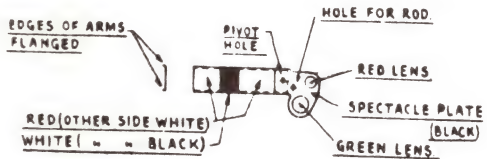
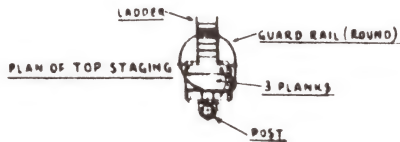
Three small 'V' notches were filed on one side of the post at 90° to its length, these are locating positions for the bearings for the signal arms and operating levers.

The bearings were made from 0.032" o.d. hypodermic needle tubing with a bore of 0.020" cut to the required length ensuring that any burrs are removed from the bore. The bearings were then soldered into the 'V's.

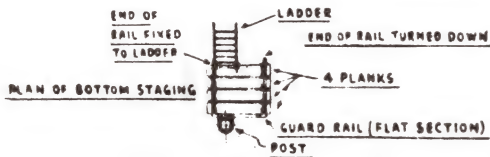
The home and distant signal arms and spectacle castings were removed from the Colin Waite fret and soldered together, making sure that the pivot holes are lined up accurately.

Pieces of 0.018" nickel silver wire were cut for the signal pivots and soldered into the pivot hole in the signal arms. The pivots were then threaded into the bearings and checked to ensure they moved freely. The signal arms were then painted and the spectacle glasses (cut from the appropriate coloured acetate provided) were fitted and fixed with a touch of cyano-acrylate adhesive.

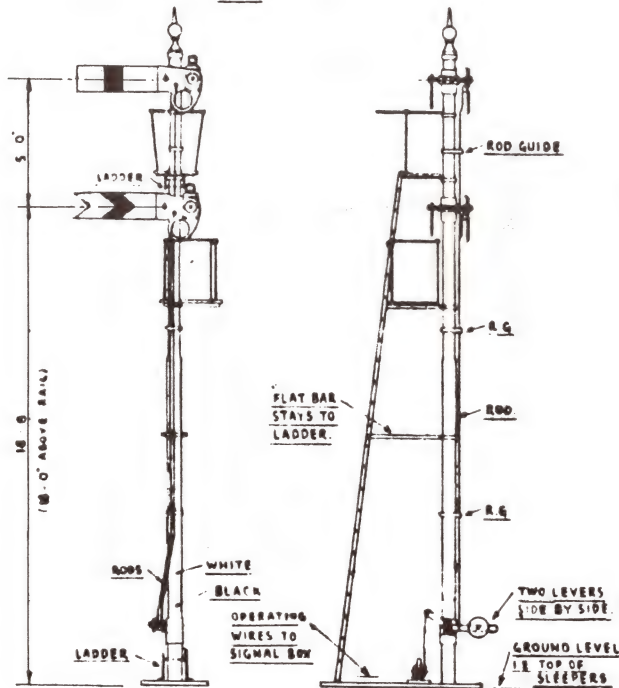
The next task was to provide the signal lamps. I used Hamblings brass turnings as these were in my box of bits, but could just as easily have turned them from brass rod. These lamps are



"STOP" ARM



"DISTANT" ARM

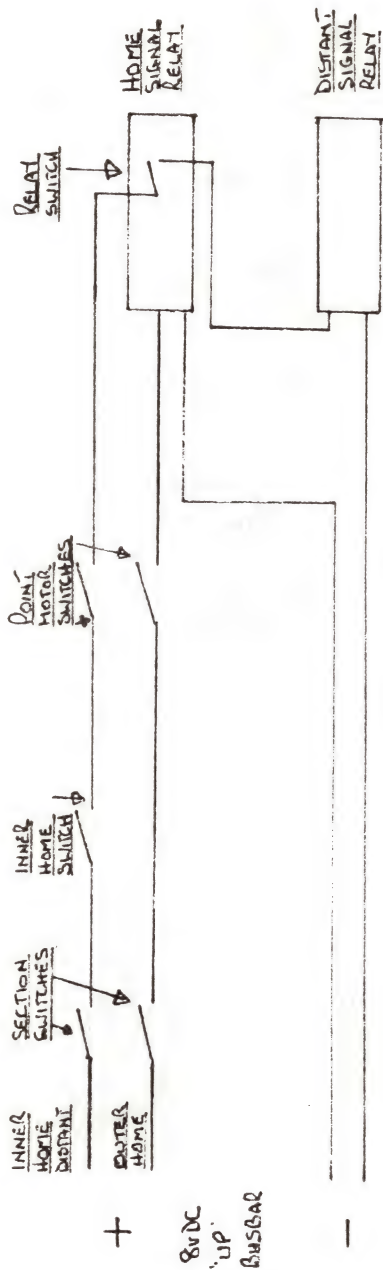


TWO ARM POST

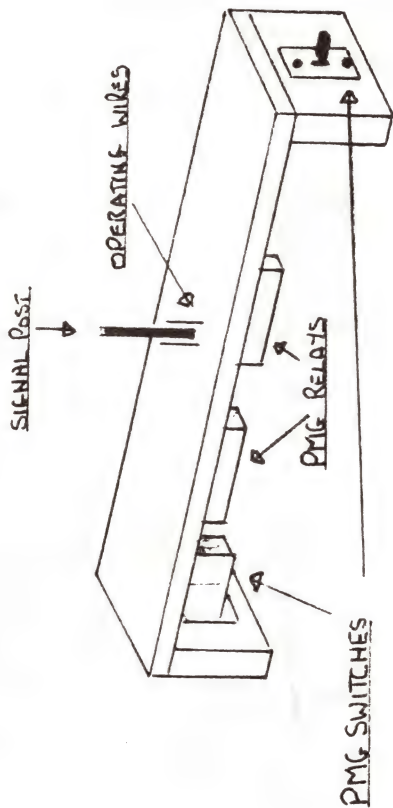


REAR VIEW SHOWING LAMP  
AND BACKSHADE

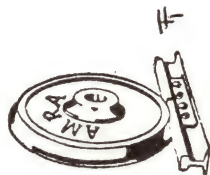




WIRING DIAGRAM



SIGNAL TEST BED



solid. As I wanted to illuminate the signals and had decided that grain of rice bulbs would be suitable, the lamps were drilled through at  $90^{\circ}$  (No 57 drill 0.043") to the vertical to provide holes for the lamp lenses. Using the lathe a hole was then drilled into the base using a No 33 drill, which gives a 0.113" hole, the G.O.R. bulb being 0.105" diameter. The hole was drilled blind to a depth sufficient to enable the glass part of the bulb to go completely into the housing. The front lens hole was opened out to No 51 (0.067"). Small brackets were made from brass shim and soldered to the lamp housing (on the post side) and then to the post (mind the bearing doesn't come unsoldered whilst doing this). The bulbs were then inserted into the housing and secured with a drop of thickish black paint around the base, this acts as an adhesive and also stops any stray light from leaking out. The lamp and brackets were painted black at the same time.

The G.O.R. bulb leads were shortened to about 0.75" and the ends bared and tinned ready for attaching the 'Telephone' wires later.

Thread the signal arm pivots through the bearings and solder on the back-light blinder, making sure that when the signal arm is in the 'off' position that the blinder obscures the back light, but allows the back light to be visible when the signal is in the 'on' position.

Separate two operating levers from the Mallard fret, cut a pivot from the 0.018" NS wire, solder a washer, from the Waite fret, to one end of the pivot, place one operating lever on the pivot up against the washer, thread the pivot through the bearing, put the other operating lever on the pivot and solder on a second washer. If all went well the levers should move freely without any slop.

Take a length of 0.018" NS wire, make a sharp  $90^{\circ}$  bend about 0.125" from one end, thread this through the signal arms operating rod bearing hole, and solder a washer onto the wire. Trim off any excess wire.

A handy tip when soldering these washers up close to the arms is to place a piece of cigarette paper over the wire, between the washer and the arms before soldering. Tear the paper away after soldering is complete, this prevents the washer from becoming soldered to the arm and also gives a thou or two clearance. There are many other applications of this technique, i.e. soldering (or rivetting) valve gear.

Back to the story. Measure down the length of wire to the operating lever with both signal and lever in the horizontal position, make a  $90^{\circ}$  bend in the wire, thread through the bearing hole and solder on a washer. Check that the signal operates without any sign of binding. If all is well repeat the operation for the other signal arm.

You will probably find that the operating rods bend when operated, don't worry, they had the same problem on the prototype, and so fitted rod guides. My rod guides are small copper split pins left over from a loco kit. The split pins were wrapped around the signal post and soldered in place - not forgetting to put the eyes round the rods as you go.

The two lampmen's platforms were made from Slaters plasticard wood planking, with handrails and stanchions from NS wire. These were fitted to the post with adhesive (5 minute epoxy). The ladder is another Colin Waite product, etched sides and fine wire rungs.

The completed signal was painted and then mounted on the test bed.

To operate the signals I used two ex PMG relays which I found would operate quite adequately on 8 V, d.c. without any appreciable heating.

Each relay armature piece was extended by soldering a piece of 0.125" square brass about 2" long to the moving part, and a piece of 0.018" NS wire was soldered to this extension, make the wire sufficiently long to go through the baseboard and up to the operating

lever plus a bit. Having passed the wire through the baseboard, secure the relay with a couple of screws.

With the signal arm and operating lever in the horizontal position, make a 90° bend in the wire from the relay and pass through the operating lever and solder on a washer. It should now be possible to operate the relay by hand and observe the signal movement. As the armature piece is moved towards the coil (power on position) the signal should come off to about 60° below the horizontal. Any slight adjustments necessary to achieve this can be made by packing under one end of the relay or by bending the armature extension piece slightly. When the armature piece is released (power off position) the signal should return to the on position. I wanted my signals to 'fail safe' and found it necessary to use a strip of 0.010" phosphor bronze as a return spring, this was screwed under the baseboard so that the free end bears on the relay armature extension piece. It may be necessary to make a stop to prevent the signal arms from passing above the horizontal, a piece of NS wire attached to the post so that it restricts the movement of the operating lever solved my problem. Check that all works well and then repeat for the second arm.

The two ex P.M.G. switches were mounted on the end pieces of the test bed and the relays wired up. Mine were wired so that one switch controlled the home signal, and one the distant, the supply to the distant being routed through spare contacts on the home signal relay, this was done so that the distant could not be pulled off until the home was off - part of my interlocking requirements.

Power was applied, and, would you believe, it worked.

The final task was to illuminate the signal lamps, so the shortened wires from the G.O.R. bulbs were soldered to the telephone wires and power applied, again all was well and the effect in darkness was very good.

Experiments showed that 5 V was ample to give a prototypical 'oil lamp' glow to the bulbs. Using 5 V will also extend the life of the bulbs, which are made to operate on 12 V.

Having proved the idea (and showed it off at one of the Branch's 'Bring and Show' nights), the signals and relays were removed from the test bed and mounted on the layout as 'Sumwear outer home' and 'Sumwear inner home distant'.

On the layout the signals are operated by the switches controlling two adjacent track sections, point work and traction current supply. As the branch is single line and I did not want the signals to come off unless the train was passing them from the facing direction an additional switch was added to the control panel. This switch is thrown for the direction of travel and supplies power to either an 'up' or 'down' direction busbar, from which the switches receive their power. The power feeds are also taken through the spare contacts on the point motors, this ensures that the signal will not come off until the point has operated, another part of my interlocking requirement. Eventually the trains will be driven to the signal indications.

As a number of buildings on the layout are fitted with illumination, and all new construction and signals, etc, will also be illuminated, I needed a 5 V power supply, and not the spare controller that I had used for the proving of the idea.

Dick Smith's 1979 catalogue gave a voltage regulator circuit for use with integrated circuits. There are four components, which cost under \$4 and the regulator gives a constant 5 V, d.c. from any a.c. source up to 35 V, with better than 1 A output. Its a matter of a few minutes' work to put the regulator together.

The unit is mounted in a grounded 4 wheel coach body (ex Ratio kit) with the glazing removed for ventilation purposes. The power for the signals and buildings is fed via telephone wires, which are 0.006" shellaced coil

winding wire mounted on Ratio telegraph poles - but that is another story - it works though.

Someone is bound to suggest that round signals posts were not typical G.W.R. practice. The G.W.R. did have some, although they mostly used tapered modern posts. I'm not game to try making them yet.

However, that brings me neatly back to the Ratio signal kits. I have a number of signals on the layout, purely decorative at the moment, which are constructed from Ratio kits of the tapered wooden post variety.

One of these is a bracket signal,

'Elswear platform down starter' and 'Elswear goods loop to main down starter' and seemed a good choice for my next attempt at making the signals operate.

I have removed the Ratio signal arms, linkages and levers and replaced them with Mallard/Waite components. The various pivot bearings have been made from hypodermic needle tube force fitted into the original bearing holes. The signals work very freely by hand and the next stage will be to fit the lamps and relays.

I had to pause though to get this article written and so keep Graham Watson happy!!!

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## SEND YOUR GOODS BY RAIL

by Great Eastern

Reprinted from A.M.R.A. Journal No 30  
November 1958

Nearly every modeller who constructs open wagons for his layout is content to build them and run them as empties, forgetting that the primary purpose of a railway is the carriage of revenue earning freight, so it is the purpose of this article to discuss suitable loads for various types of wagons and also to mention briefly a few points connected with the construction of the loads themselves. Quite apart from the prototype aspect which makes it undesirable for train loads of empties to travel around the countryside contributing nothing to the company's coffers, it must not be forgotten that from a modelling point of view loads can be most interesting to make and can certainly improve the appearance of the mixed goods as it winds its way along the track.

About box vans, bulk wheat wagons, salt wagons, bulk cement wagons, milk tank wagons, petrol wagons and many others which are closed and whose loads are therefore not visible, I shall have no more to say, neither shall I concern

myself with special loads on open wagons, such as plate glass, ships' propellers and other freight, but rarely seen. Partly enclosed vehicles, such as milk vans and stock wagons, may be provided with loads at the discretion of the operator; it is quite easy to purchase milk churns, cattle and sheep to the required scale to load into these, and a few milk churns, for instance, in a Great Western six-wheeled 'Siphon' will add interest for those who choose to look inside the wagon, although their absence will hardly be noticed by the casual observer.

It is the open wagons, including high and low sided trucks, flat tops, timber wagons, well wagons, coalhoppers and the like which really require loads to make them look convincing and interesting. Whenever possible wagons are loaded with merchandise for the return journey; after all, a 20-ton wagon with a 10-ton load earns money for the railway, but a 20-ton wagon with no payload costs money to run.

Even then of course there are exceptions; a mineral train must usually return empty to the coalfields; a cattle train returns empty from the abattoirs to the country, but wagons taking general freight to the country may well be loaded with wool bales on the return trip, and indeed the demand for wagons to transport wool is so great that, in Queensland, at any rate, they are seen carried on practically anything that will run!

The first requirement for any modeller seeking suitable loads for his four- or eight-wheeled open wagons is a set of tarpaulins. These may be made from finely woven cotton material and should be dyed a dirty dark grey. They are held in place over the wagon with cotton thread dyed the same colour and they are placed over 'loads' made of blocks of wood and pieces of cotton wool judiciously packed under the sheets so as to represent a variety of interesting freight consignments. In actual fact wool bales, bagged sugar, bagged flour, crates of this and that, bagged potatoes, bagged cement and other merchandise liable to damage by rail would all require protection by tarpaulins if consigned in open wagons; only when the coverings are removed at the loading or unloading depots would the exact nature of the freights be evident, so it is a good idea for a few wagons in sidings to be uncovered in order to display their contents. A description of a method of making sacks and wool bales appeared in 'Handikinks', 'Journal', August 1957; crates can easily be made by sticking strips of 1/32" or 1/16" balsa over suitably shaped blocks of wood. Another open load commonly seen consists of 44 gallon drums stacked side by side and standing on their ends; these can easily be made by cutting suitable lengths of 1/2", 3/8" or 1/4" dowelling, depending on the scale you are using, glueing two thin strips of Bristol board around the waist to represent the ribbing and painting the whole with black enamel.

In this country, where special hopper

wagons exist for the purpose, the ordinary open wagons do not usually carry coal. However, they carry it often enough for it to be regarded as a suitable load, specially if the wagon is already in a somewhat dilapidated condition, in which case it may be reserved for the purpose and may carry some legend on the side such as 'Loco Coal - Mayne'; further down the scale the legend may read 'Ashes-Spiders' Gully', or something of the sort, and it is then only a matter of time before the wagon is written off! Modelling coal loads is not difficult and has also been discussed in 'Handikinks', Journal August 1957 and February 1958. On British Railways the 12-ton, four-wheeled open wagon, with a 9'0" wheel base, is the maid of all work and carries loads of all descriptions, coal being one of the most important. Prior to nationalisations of the railways and of the collieries, a whole series of privately owned wagons existed solely for the carriage of coal, and these are probably well known to readers through the medium of 'Merco' litho papers and the 'Peco' Wonderful Wagon series. For anyone favouring British prototypes these are well worth inclusion in the stock list. Edward Beal in 'New Developments in Railway Modelling' discusses freight loads in some detail and provides several interesting illustrations of suitable loads for four-wheeled open wagons, including large casks (hog sheds), small casks - doubtless each conveying ten gallons of the best from Burton-on-Trent to some drier destination, large sacks, small sacks, drain pipes, sawn timber, as well as hay, straw and other sheeted merchandise. Longer loads may be carried in the 20-ton 17'6" wheel base tube wagon. Bogie open wagons are less common than they are on Australian railways, but the 50-ton wagon, which resembles many of the timber 'gondolas' seen in this country, may easily be loaded by shaping a block of wood to fit its capacity and then covering this with brick paper. Open wagons are also used to transport minerals of other descriptions, but with the ex-

ception of ballast, this is a limited interest to modellers. A load of ballast may easily be made by employing the methods described for coal, but using 'Erg' or 'Peco' granulated cork ballast in its place.

In Queensland the four-wheeled open wagons carry the basic letter F. The older ones are of timber construction, and some have end-loading facilities, originally for the conveyance of motor vehicles. However, motor cars and farm machinery may be seen as typical loads on any of them, as well as on the eight-wheeled H wagons. With the good supply of road vehicles available commercially in the 'Dinky Toy', 'Micro Models' and 'Corgi' ranges, an interesting selection can always be made, although care should always be taken when buying them to see that they are not over scale. The low-sided four-wheeled T wagons and eight-wheeled U wagons are classed as ballast wagons, but may in fact carry anything. In all cases where the load consists of small objects, such as casks, drums, cut timber, sacks, etc, these should be glued either together or to some inconspicuous base so that they stay all in one piece; it is bad enough rearranging the rolling stock after a derailment, but picking up a load of coal piece by piece may well tax the patience of the most sanguine modeller! Before leaving the subject of coal, it may be mentioned that in Queensland it is carried mainly, but not always, in four-wheeled high-sided hopper wagons carrying the basic letter V. Certain low-sided hoppers are seen, which are intended for the conveyance of ballast, but apart from the steel ballast hopper VTS, they commonly carry coal and are more often seen on coal trains than elsewhere.

Flat-topped wagons, known variously as runners, match trucks, flat cars, platform wagons, etc, are used for many purposes, although they do not as a rule form popular subjects for modelling. In certain countries the road-rail container is a load frequently seen on four wheelers. This is a large storage container which can be loaded up on a

lorry, taken to the railway and delivered to its destination with a minimum of handling of the contents which are locked away inside it for the whole journey. Four-wheeled flat wagons are also used to carry cable drums and motor cars, to act as dummy spacers for long loads between single bolster timber wagons and for many other purposes, including, in this country, the usual wool bales. Eight-wheelers are similarly used for sacks, wool bales, motor vehicles, etc.

Bolster wagons exist in many different forms; in fact even on any one particular railway system there are usually many to choose from, ranging from the short four-wheeler with a single rotating bolster to the longest bogie wagons with anything up to seven bolsters. Timber, cut or uncut, is of course the typical load for these wagons, but as a rule the longer ones are used to convey rail. The L.N.E.R. 40-ton septuple bolster wagon, and the Q.G.R. four bolster SR wagon come in this category, the former being 60'0" in length and the latter 42'0". They may easily be loaded by cutting a dozen or more pieces of waste rail to the required length - bull-head would be suitable in the first instance and flat-bottomed in the second - and after soldering the rail inconspicuously to a couple of cross pieces, placing them on the bolsters and holding them down with short lengths of chain. If welded lengths of rail are to be used and the welding is done in railway workshops, special means must be used to transport the rail to the permanent way site where it is to be used; in New South Wales I have seen about six or seven bolster wagons permanently coupled together, with buffers and end boards removed from all wagons except the first and last, and about twenty welded lengths loaded in position. Strangely enough, these lengths of rail are quite flexible and the wagons carrying them have no difficulty negotiating curves as they travel to their destination.

Care should be exercised when selecting suitable timber for loads on bol-

ster wagons; a gnarled and knotted elm trunk may be a suitable load on British Railways, but in Australia most logs are from smooth barked, straight trunked gum trees.

Twigs and branches used for model loads should therefore also be straight and smooth. The bark should be cut cleanly with a knife and a small saw should be used if the wood itself is too thick for the knife; as cutting proceeds the wood should be turned so that tearing of the bark or of the log is avoided, otherwise it will look all wrong when placed on the wagon or stacked in the wood yard. If desired, peeled twigs may be used as timber is often carried with the bark removed, and seasoned logs, such as telegraph poles, which would be grey in colour, may need a thin coat of paint. The temptation to use dowelling should be manfully resisted as this is unnaturally straight and of course does not have the correct grain.

Trains leaving the mill should have loads of sawn timber, which is easily prepared from pieces of strip pine or balsa which should then be stuck together in a solid block to facilitate handling.

All timber loads should be secured to the wagon by chains; in the smaller scales 'S&B' signal chain is suitable for this.

The last type of wagon to be discussed in this article is the well wagon. This is usually an eight-wheeled wagon, although four-wheelers do occur, and the Q.G.R. boasts one twelve wheeled type - PJW. These wagons are designed to carry very heavy loads, and the purpose of the depressed centre is to

increase the effective loading gauge. Earth moving equipment, mobile cranes, transformers, steam rollers, etc, are typical loads, many of which can be obtained from the commercial toy car ranges, but the load par excellence, which can be constructed easily from dowelling, Bristol board and a few pins, is a locomotive boiler. Practically all locomotive plans give the dotted outline of the boiler and fire box, so having selected a type of locomotive likely to be found on your layout, take the plan and trace off the outline of the boiler, including the fire box, dome and safety valve mountings, but omitting the smoke box. The bulk of the model is made of a piece of dowelling for the boiler and a shaped block of wood for the fire box, the whole being covered with Bristol board with plenty of impressed rivet detail. Holes are drilled in the front plate to represent the fire tubes and the superheater tubes and a few details are incorporated into the cab plate such as a rectangular hole for the fire box door, the regulator mounting and one or two steam gauge mountings. A row of pins' heads on each side make the fire box stays and odd bits of dowelling, card and more pins are used for the dome and safety valve. A coat of diluted red oxide paint will make it look as rusty as it undoubtedly would be in real life. The front of the boiler should be supported on a wooded block and the whole load is secured to the wagon by lengths of chain.

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### HOBBI-POL

Something that has been needed for many years is a reasonably priced insurance for our portable layouts and our scale models. Particularly at exhibitions and in transit - say when entering them in a competition away from our home city.

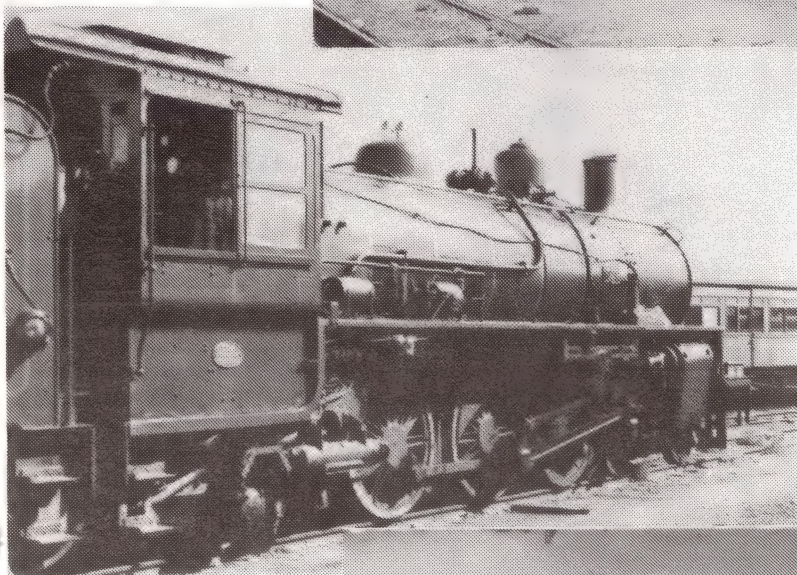
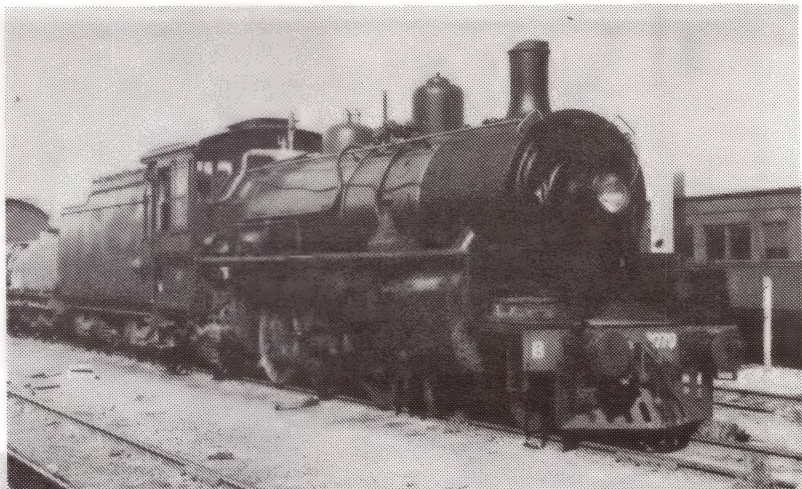
The Western Australian Branch, realising the problem, have found an insurer who, over the last three months,

has been able to produce a most reasonable policy for both portable layouts and scale models of any sort, anywhere in Australia. For instance for a cover of \$2000, the premium is \$40 plus Stamp Duty, total \$47 for Scale Models, or \$30 plus Stamp Duty, total \$36.50 for a portable layout. Your Branch Secretary, or the Federal Secretary can supply you with the latest schedule.

## PHOTO 1

BB18½ No 1079 at Mayne prior to working an ARHS trip to Murphy's Creek on 10/3/79.

Many A.M.R.A. members from NSW and Queensland were on this trip and were seated in a 1st Class Sydney Mail Parlour car.



## PHOTO 2

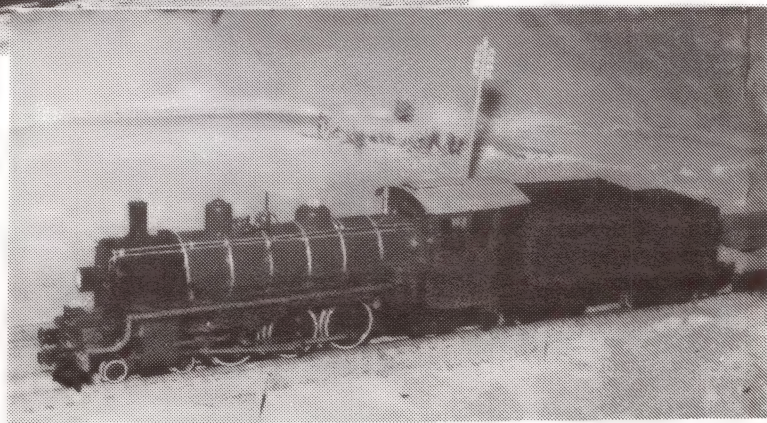
BB18½ No 1079 at Mayne 10/3/79.

1079 is only 22 years old and it is only a year since she returned to service in March 1978 after an overhaul.

A PB 15 and a C 17 steam locomotives are presently being overhauled by the Q.G.R. for excursions.

## PHOTO 3

A 1/64th scale, Sn3½ model of 1079 works a train on the AMRA Qld Branch layout. No number or builders plates or tender marker lamps were fitted at this time. This loco is running on a C 38 mechanism.



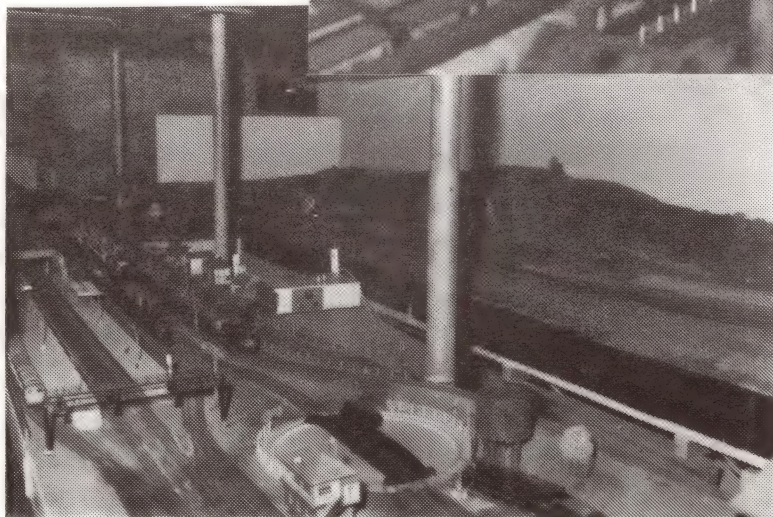
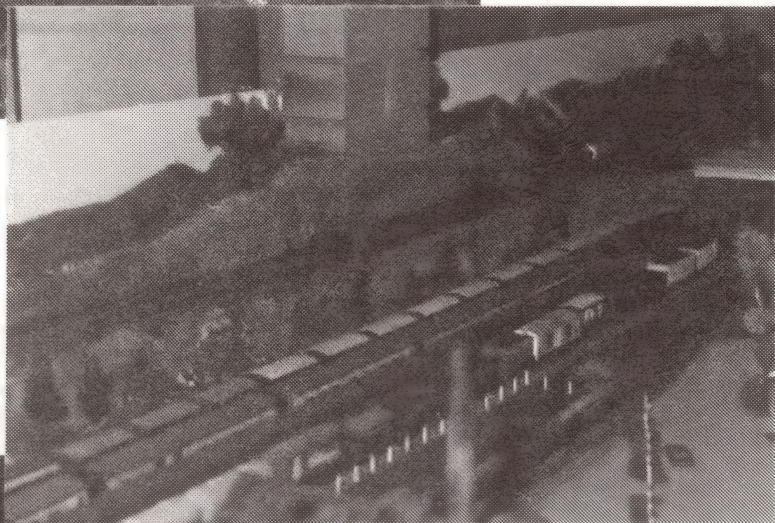
Max Maughan's

SPRING VALLEY

RAILWAY



Photos by  
LYNTON MORRIS





# SPRING VALLEY RAILWAY

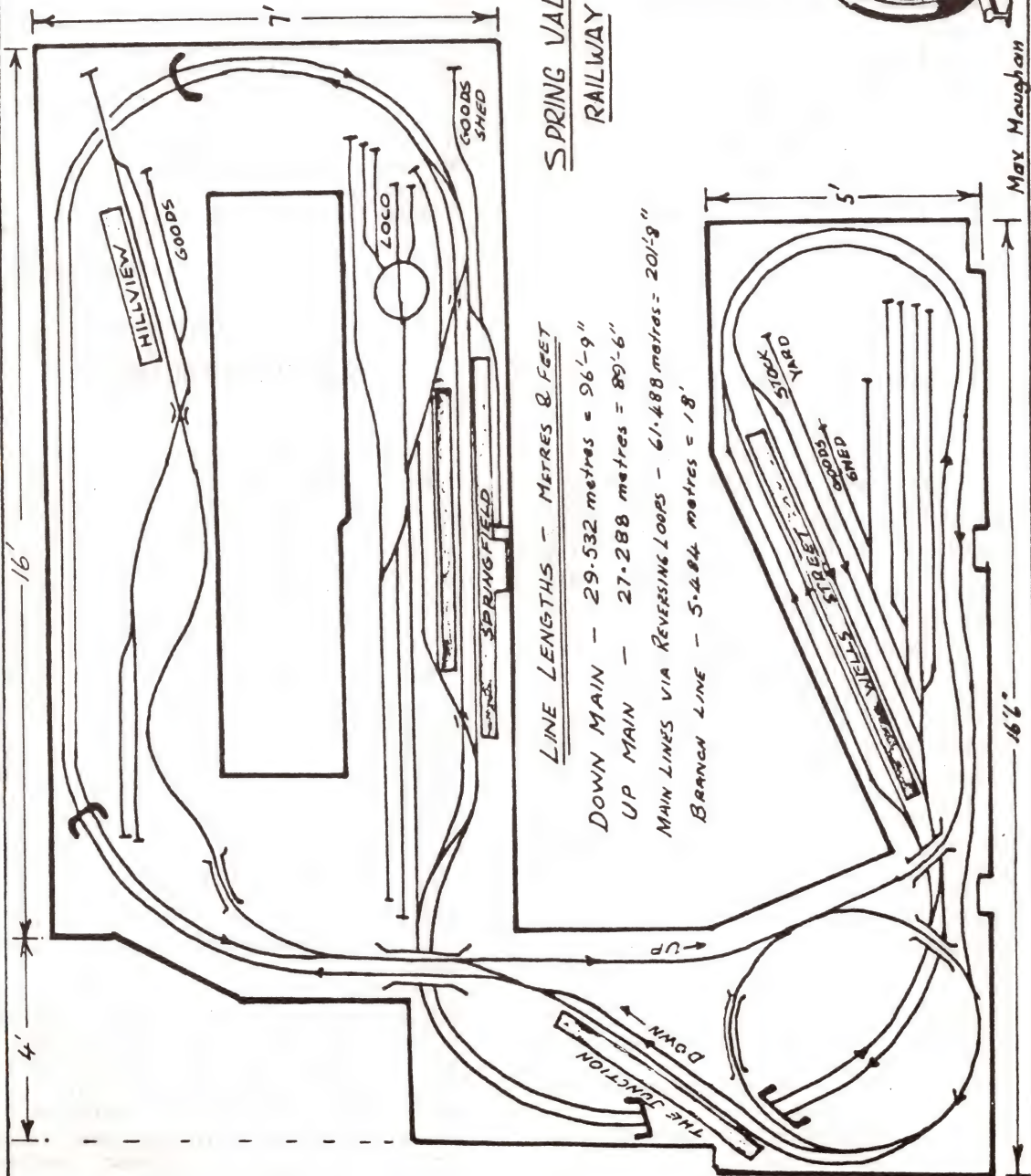
## LINE LENGTHS - METRES & FEET

DOWN MAIN - 29.532 metres = 96'-9"

UP MAIN - 27.288 metres = 89'-6"

MAIN LINES VIA REVERSING LOOPS - 61.488 metres = 201'-9"

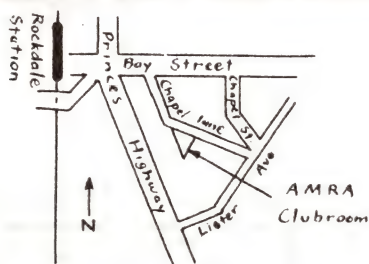
BRANCH LINE - 5.484 metres = 18'



Max Maughan

# BRANCH NOTES

## NEW SOUTH WALES BRANCH NOTES



### MARCH

- Fri 6 Ladies AGM and 43 Class conversion demonstration  
 Sat 14 Modelling Competition  
 Fri 20 Silastic Moulding demonstration  
 Fri 27 Layout operation  
 Meetings, unless specified, start at -  
 Fridays 7.30 to 11 pm  
 Saturdays 2 to 5.30 pm

Bob Gioia  
Branch Reporter

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## NEW SOUTH WALES BRANCH NOTES

The Exhibition has been a great success, and we have seen some top layouts. The Best Layout Award went to Bylong, entered by the South Coast Shunters and Muddlers, and they were voted the Most Popular Layout by the public. The Victorian Branch Award was won by the Hawksbury/Knapsack layout entered by AMRA NSW Branch.

The Branch will hold an Open Day on 15 November, where we will have displays of past modelling projects. As well as this, there will be a timetable operation on the wall layout, and all other layouts will be operating. We hope to see you there.

The Committee and I wish all AMRA members a Merry Christmas and a Happy New Year. See you next year.

The following is the program for January to March 1981:

### JANUARY

- Sat 17 Layout operation - timetable  
 Fri 23 Layout operation

### FEBRUARY

- Sat 7 State AGM, followed by layout operation  
 Fri 13 Talk (see notice board for details)  
 Sat 21 AUCTION - all goods MUST be in by 2 pm  
 Fri 27 Layout operation - timetable

## QUEENSLAND BRANCH

Greetings from Queensland. Firstly I must thank the correspondent on a past edition of Journal for the kind thoughts on our reports. Unfortunately, these have not been as often as one would like, but this is an amateur organisation of hobbyists, most of whom work. Thanks again.

After the debriefing from the successful 1980 Exhibition, the Branch is now planning for the next one, among other things. We have had great day trips to layouts in the Gold Coast area, and have provided a display at the Historical Field Day at the Redbank Museum. The Museum is recommended to visitors, and it is sited on the main highway between Brisbane and Ipswich, about 40 minutes from Brisbane. The Historical Society is also setting up another site south of Brisbane.

Another attraction is the steam train running during the Ipswich Colour City Carnival (during September). The train runs on the Swanbank Powerhouse loop. In other rail news, Ipswich is now connected to Brisbane by electric railway, and the service is expected to grow to be almost complete by the 1982 Commonwealth Games.

On modelling nights, our enthusiasts get together to collate the monthly Magazine, and then get serious about the hobby - modelling. The second Thursday of the month is the best time to catch the Branch at the home of the Treasurer.

We have had our elections this year, and the Office Bearers are as follows:  
 President Steve Malone  
 Secretary Bob Mawson

8 Woburn Street  
 North Woodridge 4114

Treasurer Arthur Hayes  
 8 Joyce Street  
 Coopers Plains 4108

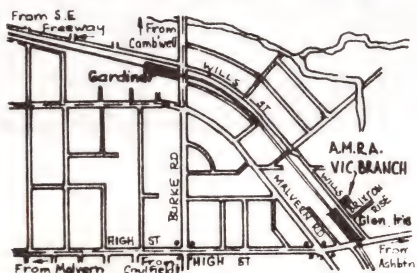
The Branch is to adopt a Constitution, and this is to operate from 1 August. It is hoped that the regulations will stabilise the Branch, and allow more time during meetings for the hobby.

This year has drawn to a close too quickly. The Branch is planning a stand for the Brisbane Hobby Show this November at the Exhibition Grounds, and this might be the last major function of 1980. As the planning of our Model Railway Exhibition is in progress we would like to hear from prospective exhibitors, clubs, private or commercial as soon as possible. The show must go on. May Day long weekend is the proposed time, three days of showing our Hobby. Contact the Secretary of the Branch.

For 1980 that's about it. From myself and the Queensland members, we hope Christmas went well, and the New Year is prosperous.

Bob Walters

### VICTORIAN BRANCH NOTES



General meetings are held on the second Thursday each month, commencing at 8 p.m. at the clubrooms, 92 Wills St., Glen Iris. The clubrooms are open from 7.30 p.m. on these nights for operation of your H0 or N gauge trains on the club layout. Working bees with operation on the club layouts are held on **TUESDAY** nights with the exception of the **TUESDAY** night before the general meeting.

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## NEWS FROM OTHER CLUBS

### PROSPECT MODEL RAILWAY CLUB

Please note that our new address is  
 PO Box 357

ST MARYS NSW 2760

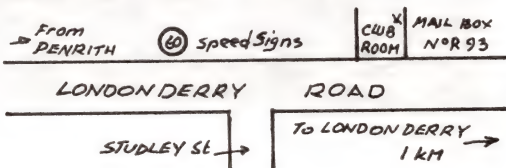
The new Committee for 1980/81 is as follows:

PRESIDENT	Greg Archer
SECRETARY	Phil McDonnell
TREASURER	Clive Riley
COMMITTEEMEN	Brian Webb
	Gordon Farnsworth

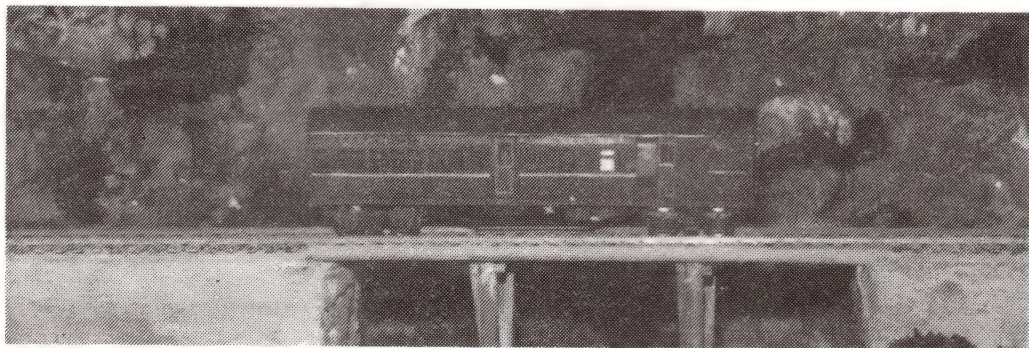
Phil McDonnell  
 HON SECRETARY

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### NEPEAN SUB-BRANCH



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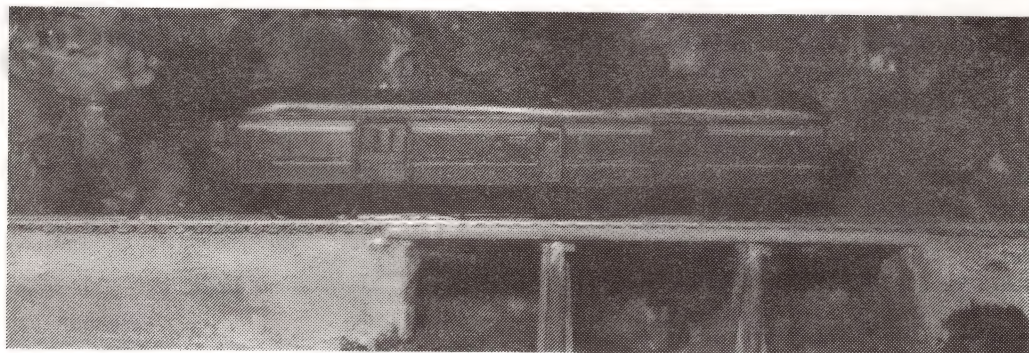


ROLLING STOCK - KIT BASED

1st HFL (cub car)

Built by Barry Flood

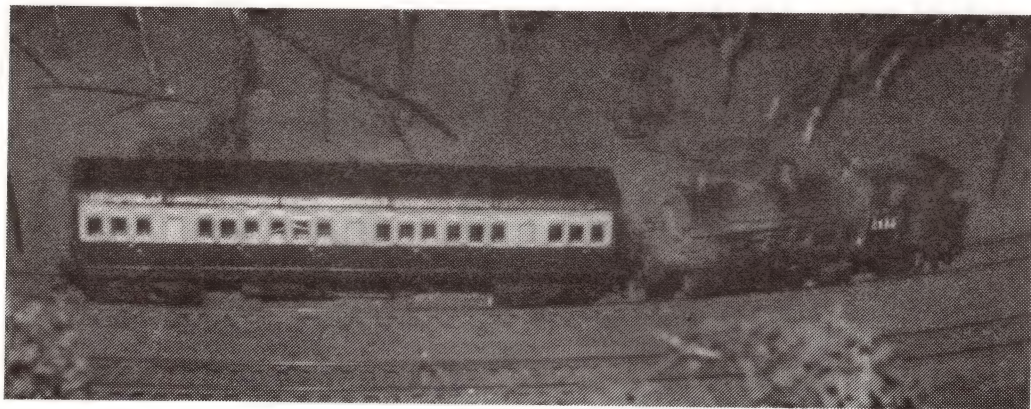
HO 4 points



2nd MHO/VHO Passenger Van

Built by John Macbeth

HO 3 points



3rd LFX Van

Built by Ken Dunkley

HO 2 points

# FABRICATED FOREST

Reprinted from AMRA Journal No.20  
May, 1956.

Build your own bush from wire, plaster  
and rubber. The low cost 'gen'

by Philip A'vard

Grab your hiking boots and stick, take a thermos of 'brew', and set off on an imaginary hike in the countryside through which your model railway is built. While on the move take a good look at the scenic wonders of the area. Do you see monotonous expanses of land unbroken, except for structures here and there, or do you see a vista of hills covered with tall awe-inspiring trees craning their necks to the light, and cleared plains with old stricken ghost gums etching the skyline with long dead arms? Let's hope that the former isn't what you observe on your jaunt, for it's a pretty poor sort of countryside that is not blessed with the wonder of nature's 'loveliest poem' - the tree. Nothing can do more for a model railway than trees along the line, giving the touch of realism so necessary to a layout. And as every model rail naturally wants his 'property' to resemble the real thing as much as possible, it is his job to supply trees in reasonable numbers, quickly, cheaply, and realistically. There are many ways of doing this, but about the easiest is the old twisted wire method. This gives a life-like form and if you're a super detail fiend you can even get down to twigs half scale inch thick in HO.

Actual techniques vary in the different scales, but the basic ideas will all be contained in this description of the construction of an 'HO' tree. Later we'll briefly discuss the application for other gauges.

Preliminary Work. First decide on the type of tree desired around your layout and if you're a 'dinkum Aussie' you should naturally decide on the eucalyptus or the acacias. Then take

camera and sketch pad and nip out to the nearest tree to note -

- a the colouring;
- b approximate proportions;
- c general characteristics,  
i.e. knots, bark, burned hollows,  
galls and other features that can  
be included.

With this done, and a firm picture of the tree in your mind and camera, let's go back and get to work.

The Trunk. Beg, borrow, or steal some electric flex (old iron cords will do) from your friends, relatives, or if you are on friendly terms, your radio repair man, then strip off all the insulation leaving only the bare stranded wire. Two feet six inches of three-core flex gives enough material for three reasonable gum trees - one core per three. The average eucalypt is forty to fifty feet high (except in heavily timbered areas) so fold the length of flex into one piece six inches long with five strands. Twist one end of this piece together and flow a little solder into it to keep it so. Trim the top strands with wire cutters (i.e. cut through the loops to give independent strands) and you're in business. Lay out the shape roughly by peeling off the strands required, bending them to form, and securing each by twisting the rest together over it. When all the limbs are in place, call a halt and have a good look at your effort. Does it look like a toffee apple? It it does, ask yourself why and rectify it, for very few real trees have such a shape. The best method is continually compare your tree with the one in mind, and remember that the limbs don't all branch out from one

to gnarl and 'butcher' the trunk where necessary. Obtain some shellac from your hardware store and dissolve it in methylated spirits until it has the consistency of cream. Apply a liberal coat of this to the skeleton with a brush, not forgetting to treat the twigs as well, but being careful not to let blobs of shellac form at the junctions. After a further two or three coats we can form details of the thick shellac.

Blackwood

Pine

Redwood

Red Juniper

Paperbark

Willow

Oak

Palm tree

Glor. tree

Glor. tree

time on the layout. For branches that are bent and gnarled, 'gash' the soldered flex with the tip of the iron. It might be an idea to now mount the skeleton on a base, soldering it onto a piece of tinfoil about two inches square. If you don't like the idea don't worry, they stand just as well in a hole in the scenery.

such as knot holes, hollows, galls, gnarled surfaces and ringbark scars. To do this apply a liberal coat of shellac over the area concerned and put the tree aside until it becomes tacky, then with a dry brush push the half-set shallac into the required shapes and set the model aside to dry thoroughly.

Foliage. The material for this can range from cotton wool to natural sponge and everybody seems to have his own preference. However, here is a list of materials I have tested, together with their advantages and disadvantages.

Cotton Wool. Tends to form into a hard lump when painted and is too dense for satisfactory results.

Steel Wool. Despite the opinions of other workers, this material definitely plays merry havoc with permag motors.

Natural (bath) Sponge. Some workers prefer this but I find that it still looks like sponge after painting and installation.

Sponge Rubber. About the most satisfactory medium readily available! Scraps can be scrounged from rubber distributors or furniture houses. The best is grey coloured material, often used in mattresses and pillows, but avoid 'texfoam' like the plague as it's too fine for the job and clogs when painted.

Assuming that you use sponge rubber, move to the next step. The rubber must be teased out into tiny pieces to reassemble the foliage, and about the best 'tools' for the job are long fingernails. If you like, sit and wait until yours are long enough, or, do as I did and enlist the services of a member of the fair sex. Get the girl friend, wife, or what have you to reduce the sponge rubber to a pile of lacy particles. If long fingernails are not available a pair of tweezers will serve, but the results are not quite as good. Now cement these fragments on to the twigs with 'Pliobond', using tweezers to place the 'foliage' where required, keeping in mind the general appearance of the tree being modelled. It is better to put the rubber on one side of the twigs only, otherwise all the fine detail you worked so hard to achieve will be hidden. Flatten out all the twigs on one branch and cement the rubber to the upper side which faces the 'sky', remembering that in most trees the foliage appears in little lumps.

Painting. Notice that we do not paint the tree until it is completely assembled, and there are two important reasons for this.

1 We can paint the little daubs of cement holding the rubber to the wire, at the same time and with the same colour as the foliage.

2 The foliage of a real tree is almost never the same colour throughout and it's easier to achieve this variation when the foliage is in place on the model rather than when it's on the table in a pile. In painting, use your newly acquired knowledge of the tree being made! Make a list of the

colours seen in the foliage and trunk and endeavour to incorporate them in the model. Leaves can vary from a brilliant green to a dark bluish grey. The trunk colour is made up from browns, blues, grey and pinks. Notice that there is no black occurring naturally, in nature, so the only black that may appear in the model will be in burned hollows and fire blackened patches on the lower trunk.

About the most satisfactory paint for the job is poster colour, and if you strike trouble getting it to take over the shellac on the trunk and limbs, add a couple of drops of wetting agent, which will make water paint flow onto practically anything. 'Agral-a' is a good wetting agent and can be obtained from nurserymen or paint stores. Consult your list of tree colours and make up a batch of the lightest colour in the foliage. Then apply this to the rubber 'foliage' with a brush, or by dipping the top of the tree into the container and working the colour through the rubber by squeezing it with the fingers. Set this aside to dry then add the darker greens and browns in patches with a brush. Paint the trunk in the same manner, using the lightest colour first and building up with darker areas. Don't forget to paint the twigs under the clumps of foliage, as this makes the tree appear even more detailed. Let the paint dry, then push the branches into final form and there's your tree!

Other Scales. From the foregoing description, it's fairly obvious that this technique can be used by workers in other scales. For larger sizes the same wire-shellac method may be adopted (although it would use a devil of a lot of material) or if so desired, normal six-strand clothes line wire and plaster can be substituted. The only drawback in this case is that the model is not rigid and the plaster cracks very easily.

Placement of Trees. One thing that can make or break the scenic effect is correct tree placement. Like humans, trees adapt themselves to their

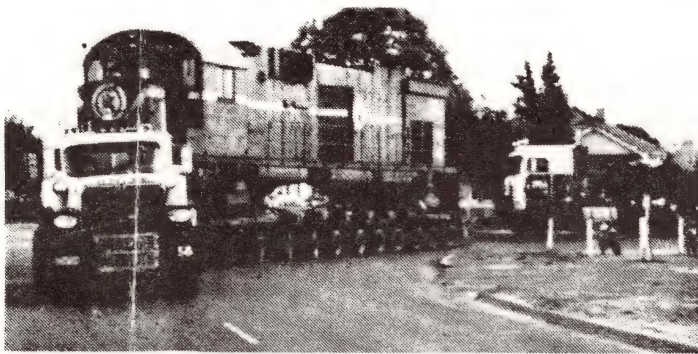
environment, and because of this their shape varies in different localities. In heavily timbered areas where they are naturally close together, they grow tall and straight in their efforts to develop into a broad but shorter form. Trees are also affected by the elements and the physical features of the area. If there is a prevailing wind they generally lean in that direction, if the rainfall is low they tend to be stunted and vice versa. So next time you are in the country, note this type of thing - the position of the trees in relation to one another, their shapes, their condition, location and deformities. Find a reason for each point and incorporate these features in your own little bit of countryside - then stand back and be amazed at the effect.

In General. Whatever the scale

being used, this basic technique lends itself to the production of lifelike individual trees or massed forest. I must admit to little experience outside of my HO gauge scale in this respect, and the Journal will be pleased to print the comments of workers in other gauges, or for that matter the opinions of other 'afforestation experts' in 3.5 or 4 mm scales who may or may not disagree with these notes. In the final analysis, all that is required is a rough knowledge of the type of tree being modelled, including its shape and general characteristics. This sounds impressive, but after all is only pure observation, and if it is always remembered that everything about a model should have a reason for being, then you can't go very far wrong!

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### Pilbara locos piggybacked to Perth



A Pilbara locomotive, on a trailer being pulled from the front and pushed from the rear, on its way by road to Perth for overhaul

Reprinted from Engineers Australia -  
July/August 1980

Getting locomotives from the iron-ore railways of the Pilbara to Perth for overhauling has caused some unusual sights on WA roads.

Recently a Mt Newman loco moved quietly through the streets of Perth on the back of a specially imported French low-loader.

Two prime movers were used, one pulling the trailer and one pushing. Two other conventional low-loaders each

carried a 27-tonne bogie.

The 108-tonne loco was carried on Bell Freightlines' new 96-wheel, 12-axle platform trailer.

The convoy took three days to travel the 1180 km from Newman to Perth. The final 60 km across Perth to Mitchell Cotts Engineering at Kewdale took another half day.

The locomotive was the first of 12 which will be sent to Perth for one-million-kilometre overhauls.

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# PLUG IN COLOURED LIGHT SIGNALS

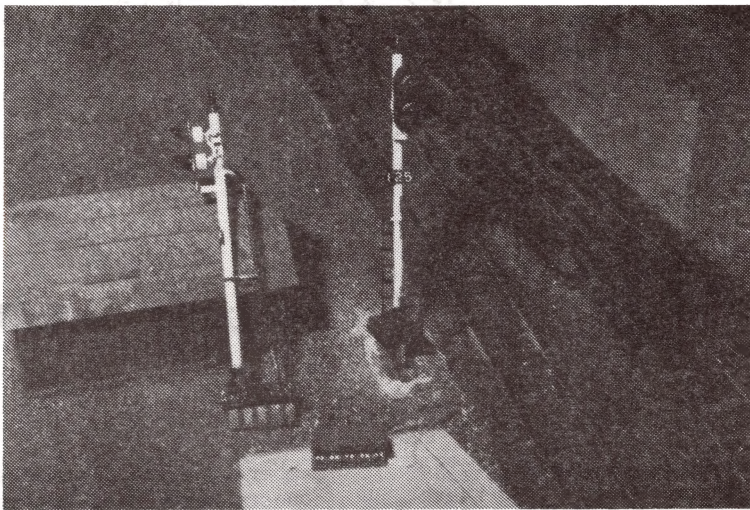
by Max Maughan

Photos by Lynton Morris

Making two and three aspect signal lights look all the same. Easy to change a light when it doesn't work and also wiring Grain of wheat lamps up to the system is a bit of a problem at the best of times.

connector for a socket. This socket acts as a holder, electrical connection for the signal, and a terminal block.

Actually, the plug was cut from the plug section of an old circuit board and is the right fit for the edge connector piece.



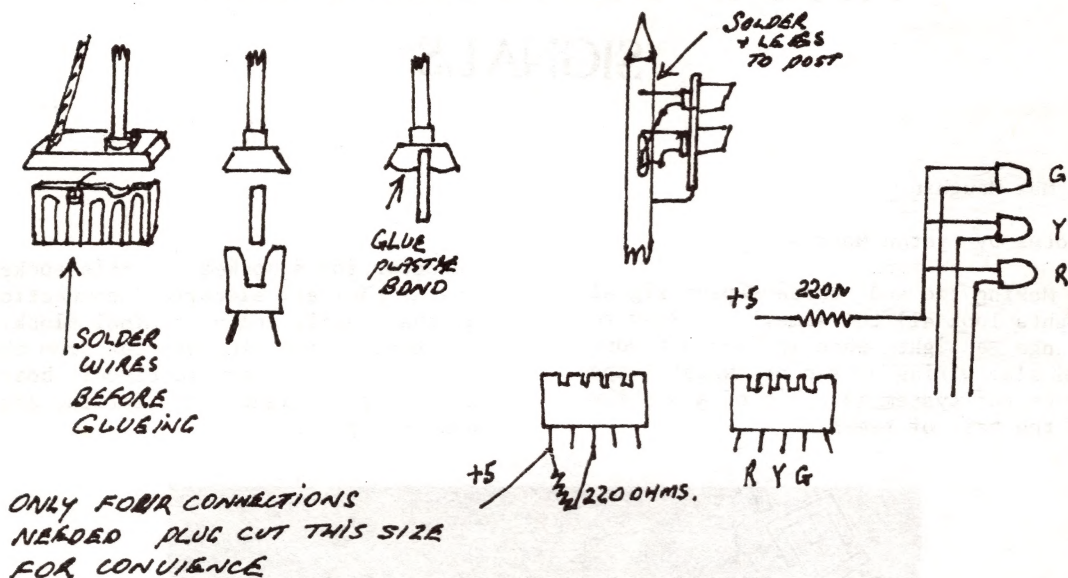
But by changing the grain of wheat globes for LEDs makes them all the same brightness. Making the signals plug in for easy removal makes life a lot easier.

What I have done is to glue a plug made of PC board to the bottom of the signal base. I have mounted in the base board of the layout where the signal is required, a piece of an edge

Another great advantage of this system is that when the layout is moved the signals can be removed, or when working on the layout and a signal is bumped, they fall out, not bend over.

If all signals are wired the same way, they can be all interchangeable making fault finding easier.

I have at present on my layout 14 two aspect and 6 three aspect, also a signal gantry with three two aspect, all built on this plug-in system.



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## FOR READERS LETTERS

Dear Rex

Like Cedric Rolfe I regularly go through old Journals too, and there seems to be a few very hardy perennials that keep coming up.

The lack of advantage to country members is very regular, yet I cannot recall ever seeing a letter written by a country member claiming so, in fact a number of letters over the years from country members refute the suggestion.

If one, and I have, goes through the 1960 membership list and compares it to our latest, most of the 1960 country members are still with us, yet a very small number of our city or near city

members are still members. Obviously country members do not agree. I would suggest to any to ask themselves if it is not their own fault if they do not get any advantage.

The lack of progress of Journal, I guess, is largely financial; compare our subscription today with 1960, then compare the price of model railways with the price of Model Railway News of 1960; Railway Modeller Today with its 1960 price; I could go on, in comparison we should be paying nearer \$100 per year! If members are prepared to pay the price, no doubt Journal can do better.

Going over old Journals, I find there

are a host of interesting articles; on receipt of Journal many are very uninteresting, but only because they do not contain articles of interest at that particular moment, yet I find, often the same Journal sometime later has just the information I want. We do not all model on the same lines, so there will always be some articles not relevant to one's methods, but surely one can be tolerant of the other man's thoughts, in fact, I find an interest in seeing how the 'other half do it'.

Perhaps I should complain, no one ever suggests my methods. I really wonder how many would want to use them. There would very soon be complaints of requiring an engineering machine to do so.

To those complaining of not getting their worth, I suggest they sit and ask themselves if it is not their own fault.

Broughton Boydell

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The Editor  
AMRA Journal  
Dear Rex

There have been several letters and articles in Journal on the subject of what is wrong with AMRA. The biggest problem seems to be lack of material for the Journal, and it has been suggested that the few regular writers have written themselves out. I have had articles in almost every Journal for the past 5 years and have by no means written myself out.

My problem is reduction of enthusiasm due to lack of feedback over what I have written. In the last Journal there was a letter which, for the first time, made reference to some of my articles and now I know that I have at least one reader where I previously thought there was none.

From this one reference it has given me enthusiasm to pick up the pen again, so how about these former writers who have written themselves out, writing in a few comments on the present articles.

Let there be feedback and the articles will come flowing in again.

Peter Betts

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The Editor  
AMRA Journal  
Dear Rex

The results of the competition for the best layout at the recent NSW Branch Exhibition were greeted with some controversy. A few years back a system of marking was standardised by which certain maximum marks were awarded for various aspects of the layout. It is difficult to see how the judges reached their decision for the best layout in 1980 if this system was adhered to. If the system of marking has now been abandoned, it is a sad day for modelling in NSW for everything then depends on the whim of the judge and this does nothing to improve the standards of modelling.

(the sender will remain anonymous -  
Rex Little)

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The Editor  
AMRA Journal  
Dear Rex

It is very obvious that you cannot win; in the Journal I have just received is what I thought was a new contributor, but on checking, I gather you have credited Jack Martain for a letter from Jack Makin.

Having said that, can I cross swords with Jack Makin. I will not agree with Jack that in his day few got a secondary or, as we called it, a High School education, unless their parents could afford Boarding School or College. Certainly few availed themselves of a higher education, but in the early 1920s, which were my school days, a train left Moss Vale around 5 am, due at Campbelltown 7.55 am, and more than

half the loading of this train was high school students, many of whom started from Moss Vale and most attended Parramatta High School. These students changed trains at Granville. Moss Vale students had a 15-16 hour day.

We used a Student's Pass for travel, which, if I remember correctly, cost us one shilling (ten cents) per quarter.

My children travelled 90 miles a day to attend Primary School, and all except two, had to board away to finish their education. These days travel is by bus, not rail.

Many tales could be told of the old school trains and travelling.

Broughton Boydell

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## Hints, Tips and Queries?

by F R Potts

I purchased a Model Power US diesel, flywheel type, for repaint to Empire Builder, of course. The motor and drive train had a shocking chatter.

I did everything to fix it, but no go. Plastic tape (Nitto Tape) came to the rescue. A piece about  $\frac{1}{2}$ " x  $\frac{3}{8}$ " was wrapped around the motor and shaft coupling drive. Hey presto, it worked and is quiet as a church mouse now.

The tape has enough elasticity to allow movement and float of the drive train and coupling. It was so simple that I thought that this may help others in a similar predicament.

Model rail is fun!

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